

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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IN THE APPLICATION OF:

MATTHEW R. SIVIK

DOCKET No.: 3246R

SERIAL No.: 10/805,055

FILED: MARCH 19, 2004

CUSTOMER NUMBER: 26645

EXAMINER: AMY T. LANGE

GROUP ART UNIT: 3731

**TITLE:** *Functionalised Polymer Composition for Grease*

Wickliffe, Ohio

Dated: August 31, 2007

Mail Stop AF  
Hon. Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Declaration Under Rule 1.132

Sir,

I Matthew R. Sivik a named inventor of the above-identified application hereby declare:

1. I, Matthew R. Sivik, have been employed by The Lubrizol Corporation as a chemist since 1991. I obtained a PhD. from The Ohio State University in 1991 in the field of organic chemistry and have 16 years experience in research in the preparation and formulation of additives and polymers for use in lubricants and greases.
2. As noted in claim 1 which is reproduced herein:

A grease composition consisting essentially of:

(a) about 0.06 to about 10 weight percent of an polymer derived from monomers comprising:

(i) a vinyl aromatic monomer;

(ii) an unsaturated dicarboxylic acid anhydride or derivatives thereof;

(b) a thickening agent, wherein the thickening agent is either

(i) an inorganic powder selected from the group consisting of clay, organo-clays, bentonite, fumed silica, calcite, carbon black, pigments, copper phthalocyanine and mixtures thereof; or

(ii) a metal salt of a carboxylic acid selected from the group consisting of a mono-hydroxycarboxylic acid, a di-hydroxycarboxylic acid, a poly-hydroxycarboxylic acid and mixtures thereof;

(c) an oil of lubricating viscosity, and

(d) 0 to about 20 weight percent of other performance additives selected from the group consisting of antioxidants, rust inhibitors, metal deactivators, antiwear agents, anticuffing agents, extreme pressure agents, foam inhibitors, demulsifiers, friction modifiers, viscosity modifiers, pour point depressants and mixtures thereof, wherein the esterified polymer contains titratable acid groups with a total acid number of at least about 4.

Elements (a) and (b) of the claim are an esterified polymer and a thickening agent respectively. The esterified polymer and the thickening agent are different elements providing the grease with different properties. The thickener provides the grease with non-Newtonian properties. The esterified polymer provides the grease with water repellence and/or water wash-off properties.

3. The definition of the esterified polymer of the present invention specifies:

“an esterified polymer derived from monomers comprising:

(i) a vinyl aromatic monomer;

(ii) unsaturated dicarboxylic acid anhydride or derivatives thereof;”

This definition is the same as the definition submitted in my declaration dated 6/11/2007, i.e.,

“a polymer comprising:

(i) a vinyl aromatic monomer;

(ii) an esterified unsaturated dicarboxylic acid anhydride or derivatives thereof;”

The reason that both are the same is due to the fact that the unsaturated dicarboxylic acid anhydride monomer forms ester groups. This is explicitly taught in the specification of the present case on page 7, line 20 to page 9, line 2. The disclosure has a sub-heading of “Alcohols”. The first sentence states:

“The esterified polymer is formed by reaction of the dicarboxylic acid anhydride or derivatives thereof with an alcohol to form esterified groups.”

Accordingly, both terms are one and the same.

4. The grease composition of US Patent Application with Serial Number 10/805,055 does not contain thiosulfates.
5. I further declare that all statements herein made of my own knowledge are true and all statements herein made on information and belief are believed to be true. I understand that wilful false statements and the like are punishable by fine or imprisonment or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.

A handwritten signature in black ink, appearing to read "Matthew R. Sivik", written over a horizontal line.

Matthew R. Sivik